

Notice of Allowability

Application No.

10/621,694

Examiner

Patrick J. Lee

Applicant(s)

MAHAJAN ET AL.

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed July 12, 2006.
2. ☒ The allowed claim(s) is/are 1-7, 9-26 and 29-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Pugh on August 16, 2006.

The application has been amended as follows:

Claim 1 has been amended to read:

1. (Currently Amended) A photodetector comprising a photoconversion structure, the photoconversion structure comprising:

an indium gallium arsenide (InGaAs) absorption layer, the InGaAs absorption layer having a Group III sublattice indium concentration greater than 53 percent;

a substrate;

~~a metamorphic buffer layer disposed between the photoconversion structure and the substrate;~~

a p-type anode layer;

a n-type cathode layer, wherein the InGaAs absorption layer is disposed between the p-type anode layer and the n-type cathode layer; and

an etch stop layer, wherein the photodetector includes a metamorphic buffer layer disposed between the photoconversion structure and the substrate, and wherein

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the etch stop layer being is disposed between the n-type cathode layer and the metamorphic buffer layer.

Claim 29 has been amended to correct a dependency on a cancelled claim 27 to read:

29. (Currently Amended) The photodetector of claim ~~27~~ 26, wherein the substrate comprises gallium arsenide,

wherein the metamorphic buffer layer comprises indium aluminum arsenide (InAlAs),

wherein the n-type cathode layer comprises InAlAs, and

wherein the p-type anode layer comprises InGaAs.

Allowable Subject Matter

2. Claims 1-7, 9-26, & 29-33 are allowable over the prior art.

3. The following is an examiner's statement of reasons for allowance:

With respect to claims 1 & 20, the prior art of record (US 6,482,672 B1 to Hoffman et al) does not disclose nor suggest the arrangement of the etch stop layer disposed between a n-type cathode layer and a metamorphic buffer layer. The prior art of record has only disclosed the use of an indium gallium arsenide layer with an indium concentration greater than 53%. As a result, claims 1 & 20 and dependent claims 2-7, 9-10, 21-26, & 29-33 are allowable over the prior art.

With respect to claim 11, the prior art of record does not disclose nor suggest the formation of the metamorphic buffer layer through the steps claimed. As a result, claim 11 and dependent claims 12-19 are allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patrick J. Lee

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PJL
August 16, 2006



Stephone B. Allen
Primary Examiner